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10/561,996	12/23/2005	Christinus Antoinetta Paulus Van Liempd	NL 030810	1530
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			EXAMINER	
			CHOW, LIXI	
		ART UNIT	PAPER NUMBER	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/561,996

**Applicant(s)**

VAN LIEMPD ET AL.

**Examiner**

Lixi Chow

**Art Unit**

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/US)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Kuwabara et al. (US 4,972,400; hereafter Kuwabara).

Regarding claim 1:

Kuwabara discloses an optical disk drive (see Fig. 9) comprising an electronic unit comprising a first electronic circuit (Fig. 10, element 50); an optical pick-up unit (Fig. 9, element 2) that is movably assembled with respect to the electronic unit and comprises light generation means (Fig. 9, element 3) for writing/reading data to/from an optical disk, and comprising a second electronic circuit (Fig. 11, elements 6 and 60) having a plurality of light sensors (Fig. 11, element 6) for receiving reflected light from the disk which originates from the light generation means, each light sensor having an output for delivering an electrical signal; and coupling means for coupling the second electronic circuit to the first electronic circuit for the transfer of information between the first and second electronic circuits (see Fig. 10), characterized in that in a normal operational mode a number of the electrical signals are combined by the second electronic circuit (see Fig. 11; the signals are being combined by element 65), these combined electrical signals and the remaining uncombined electrical signals being transferred via the coupling means to the first electric circuit (see Figs. 10-11), and that in a test mode all of part of

the electrical signals are separately processed by the second electronic circuit (see Fig. 11; elements 68 and 69 are part of the second electronic circuit on the pickup unit which is used for processing signals during test mode).

Regarding claim 2:

Kuwabara discloses an optical disk drive according to claim 1, characterized in that the second electronic circuit comprises a plurality of amplifiers (see Fig. 11, elements 61-64) each having an input separately coupled to the outputs of the light sensors in the test mode and each having an output, in that a number of the outputs of the amplifiers, which number equals the number of the combined and the remaining uncombined electrical signals in the normal operational mode, is separately coupled to the coupling means (see the Fig. 11); and in that a number of the inputs of the amplifiers, which number equals the number of the combined electrical signals, is separately coupled to other inputs of the amplifiers in the normal operational mode (see Fig. 11).

Regarding claim 3:

Kuwabara discloses the optical disk drive according to claim 1, characterized in that the coupling means are implemented by a flexible electrical connection device (see col. 4, lines 19-28; the material used to transmit signals from element 2 to element 50 as shown in Fig. 10 is inherently flexible).

Regarding claim 5:

Kuwabara discloses an optical disk drive according to any of the preceding claims claim 3, characterized in that during operation the light generation means generates a main light spot (see Fig. 11, photodetector A-D is used to receive light from a main light spot) and a first and a

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second satellite light spot (see Fig. 11, photodetector E and F receive light from first and second satellite light spot, respectively), in that the plurality of light sensors is subdivided into a main part for receiving light which originates from the main light spot, a first satellite part for receiving light which originates from the first satellite light spot, and a second satellite part for receiving light which originates from the second satellite light spot, and in that the combined electrical signals are combinations of electrical signals corresponding to the first and the second satellite parts of the light sensors (see Fig. 11, element 67 combines signals from first and second satellite part of the light sensors).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuwabara in view of Masui et al. (US 7,142,486; hereafter Masui).

Regarding claim 4:

Kuwabara discloses all the features set forth in claims 1 and 3; however, Kuwabara fails to disclose that the flexible electrical connection device is a flexible printed circuit. On the other hand, Masui discloses an optical disk drive comprising a flexible electrical connection device, wherein the flexible electrical connection device is a flexible printed circuit (see col. 1, lines 52-59).

One of ordinary skill in the art would have been obvious to use a flexible printed circuit as the coupling means. Since flexible printed circuit provides flexibility in design, one of ordinary skill in the art would have been motivated to modify the optical disk drive of Kuwabara to use a flexible printed circuit.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuwabara in view of Yanagawa (US 6,246,660).

Regarding claim 6:

Kuwabara discloses all the features in claims 1, 3 and 5, and Kuwabara further discloses the optical disk drive, characterized in that the main part comprises four sections (see Fig. 11) for delivering four of the electrical signals, further to be denoted the four main electrical signals, the first satellite part comprises a section for delivering the electrical signal not being the four main electrical signals, further to be denoted the first satellite part electrical signal (see the output of the signal from photodetector E in Fig. 11), and the second satellite part comprises a sections for delivering the electrical signal not being the four main electrical signals or the first satellite part electrical signal, further to be denoted the second satellite part electrical signal (see the output of the signal from photodetector F in Fig. 11), and in that in the normal operational mode at least the first satellite part electrical signal is combined with the second satellite part electrical signal (see Fig. 11, element 67 receives signals from both detector E and F).

Kuwabara fails to disclose that the each of the first and second satellite part comprises two sections. However, Yanagawa discloses an optical disk device comprising a main part for receiving light from the main beam (see Fig 4, element 281), a first satellite part for receiving light from a sub-beam, and a second satellite part for receiving light from another sub-beam,

wherein each of the first and second satellite part comprises two seconds (see Fig. 4, elements 282 and 283).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Kuwabara and Yanagawa because valuable signals can be obtained when satellite parts are comprised of two sections.

6. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuwabara in view of Sasaki et al. (US 2004/0037191; hereafter Sasaki).

Kuwabara discloses all the features in claim 1 and 2, and further discloses that amplifiers can be switched off (see col. 7, lines 29-38).

Regarding claims 7-8:

Kuwabara fails to disclose that control signal can be send via a line to control the gain or gains of the amplifiers. However, Sasaki discloses an optical disk drive comprising a control means to control the gain or gains of amplifiers (see par. [0038]).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the teachings of Kuwabara and Sasaki because controlling the gain or gains of the amplifiers yield improved signal quality, thereby improving the overall performance of the optical disk drive.

Although Kuwabara and Sasaki do not mention using a bus system; however, Examiner takes Official Notice that using a bus system to transmit information is a well known technology, and using a three-level logic bus system is matter of design choice. A person of ordinary skill in the art would have been motivated to use a bus system in the optical disk drive of Kuwabara so number of lines between various components within the disk drive can be simplified/minimized.

Regarding claim 9:

Claim 9 recites similar limitations as in claims 7 and 8; hence, claim 9 is rejected under the same reasons set forth in claims 7 and 8.

7. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuwabara in view of Sasaki as applied to claims 7 above, and further in view of Hikima et al. (US 6,337,838; hereafter Hikima).

Regarding claim 10:

The combination of Kuwabara and Sasaki fails to disclose a power supply line of the at least one amplifier. However, Hikima discloses an optical disk drive comprising a plurality of amplifier, characterized in that at least one power supply line of the at least one amplifier is used for sending the additional information by temporarily increasing or decreasing the voltage level on the at least one power supply line (see Fig. 1, the voltage level of element 21 or 31 varies).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to temporarily increasing or decreasing the voltage level of the amplifier because detected signal can be appropriately compensated for to thereby provide a high quality signal.

Regarding claim 11:

Kuwabara discloses a playback/recording apparatus comprising an optical disk drive as defined in claim 7 (see Fig. 9).

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lixi Chow whose telephone number is 571-272-7571. The examiner can normally be reached on Mon-Fri, 8:30am to 6:00pm.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

3/30/08

/Wayne R. Young/  
Supervisory Patent Examiner, Art Unit 2627